FEMP – Distributed Energy Resources

- Alternative Financing Case Studies
- The National Animal Disease Center in Ames, Iowa

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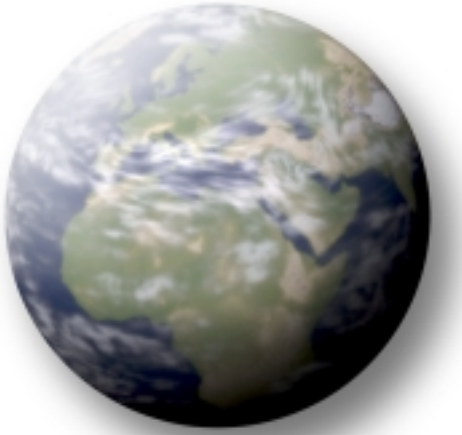
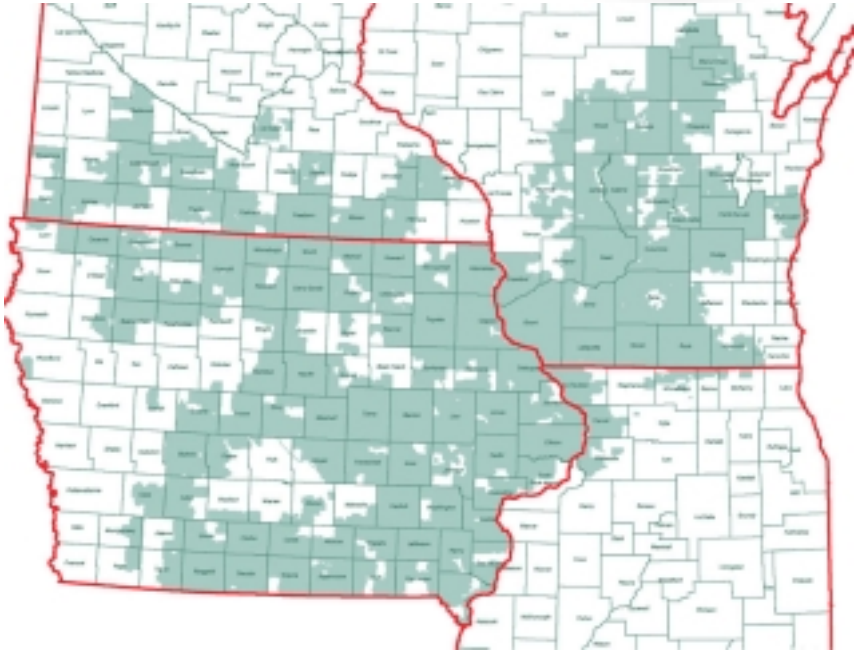
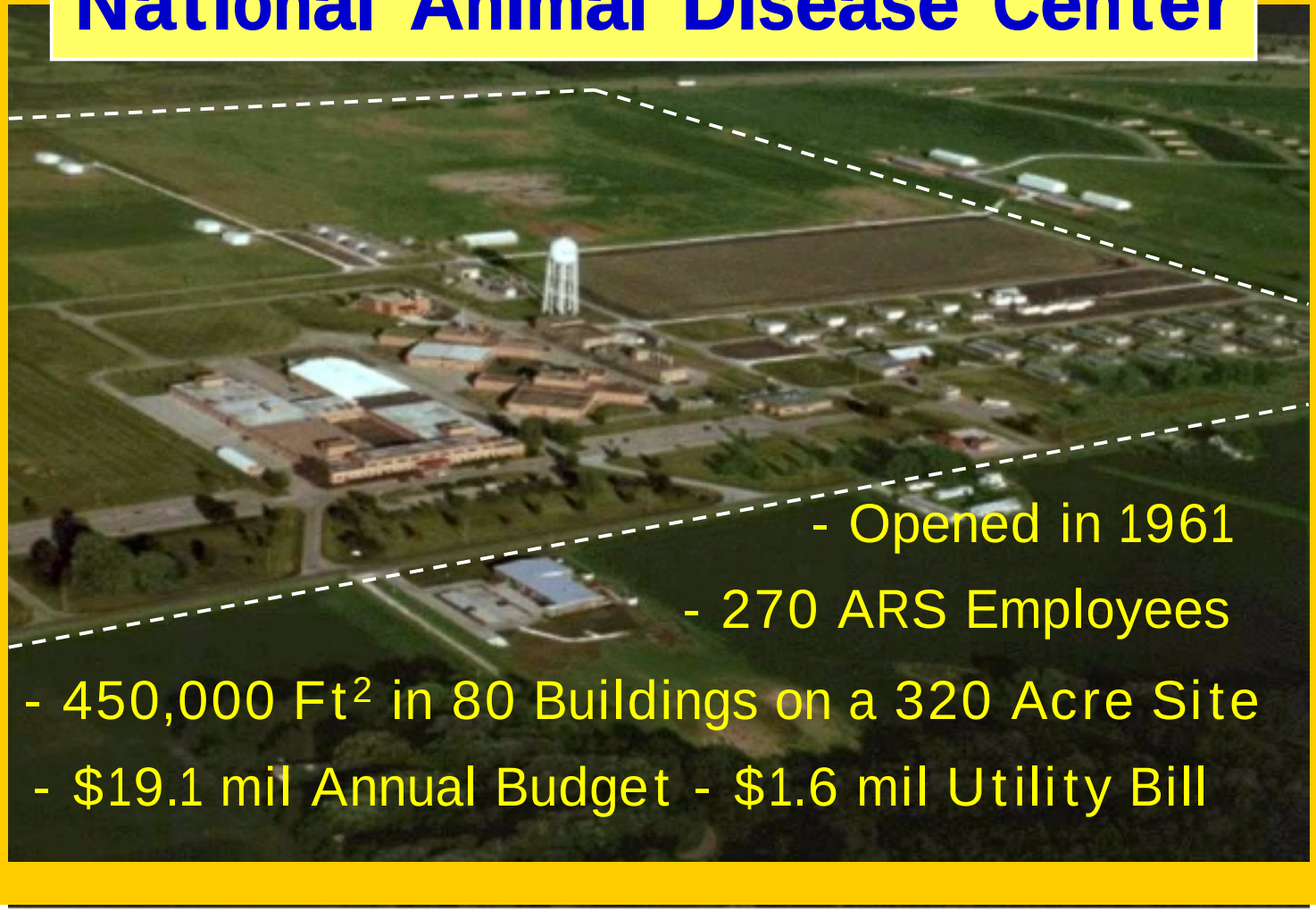
Who is Alliant Energy?



- Alliant Energy is a UESC
- A growing energy services provider, Alliant Energy serves 1.3 million customers throughout a four-state territory (Iowa, Wisconsin, Minnesota and Illinois)
- Operations are worldwide



National Animal Disease Center



- Opened in 1961
- 270 ARS Employees
- 450,000 Ft^2 in 80 Buildings on a 320 Acre Site
- $19.1 mil Annual Budget - $1.6 mil Utility Bill

ESCO Perspective

JOHNSON CONTROLS

Selected as ESCO for project based on technical content in proposal for DOE Midwest Area Super-ESPC IDIQ Contract

Alliant Energy selected as major Sub-Contractor on the Super ESPC

The “Process” during the Super ESPC

- Initial Vision & Development of the Project by NADC
- Selection of the ESCO, including partners
  - Pick your partners carefully
- Development of the Project Scope, & the Goals of all Stakeholders
  - Acquire data and information from the site
  - Analyze opportunities and options
  - Quantify potential energy savings
  - Complete life cycle cost analysis
  - Agree on financial model
  - Investigate other successful installations
  - Determine best business case scenario
  - Get consensus from all stakeholders
  - Prepare final proposal and move it forward
  - Sign contracts and agree on conditions
  - Prepare a Project Management Plan
  - Complete the Project

The “Process” continued

- Original vision of the Super ESPC was a $1,500,000 project
  Final version of this Super ESPC was a $6,400,000 project
- Find the Win – Win Relationships for all Stakeholders
- Must maintain flexibility & creativity through design & contract signing
- A Design/Build Project needs a commitment to task and trust of all stakeholders
- Appropriate and timely communication is critical to success!

Co-Generations Options Explored

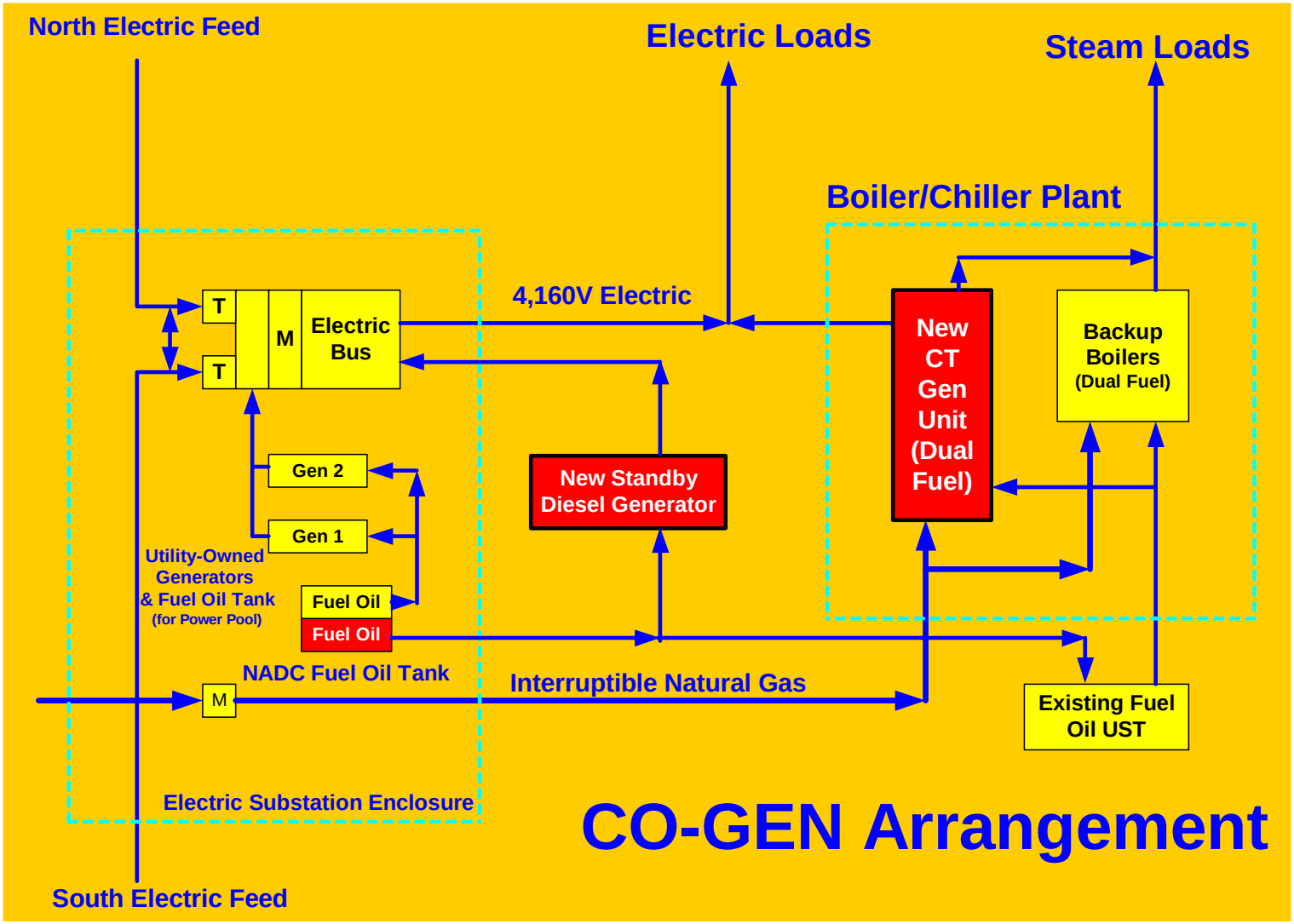
- Two (2) Combustion Turbines (W/ Heat Recovery)
- One (1) Combustion Turbine (w/ Heat Recovery)
- Three (3) Reciprocating Engines (w/ Heat Recovery)
- Two (2) Standby Reciprocating Engines (w/o Heat Recovery)
- One (1) Combustion Turbine (w/ HRSG) & one (1) Diesel Standby
- One (1) Condensing Steam Turbine Generator

Co-Generation ECM

-Replace 40-yr old boiler
-Heat Recovery Steam Generator
-8,000 #/hr + duct firing

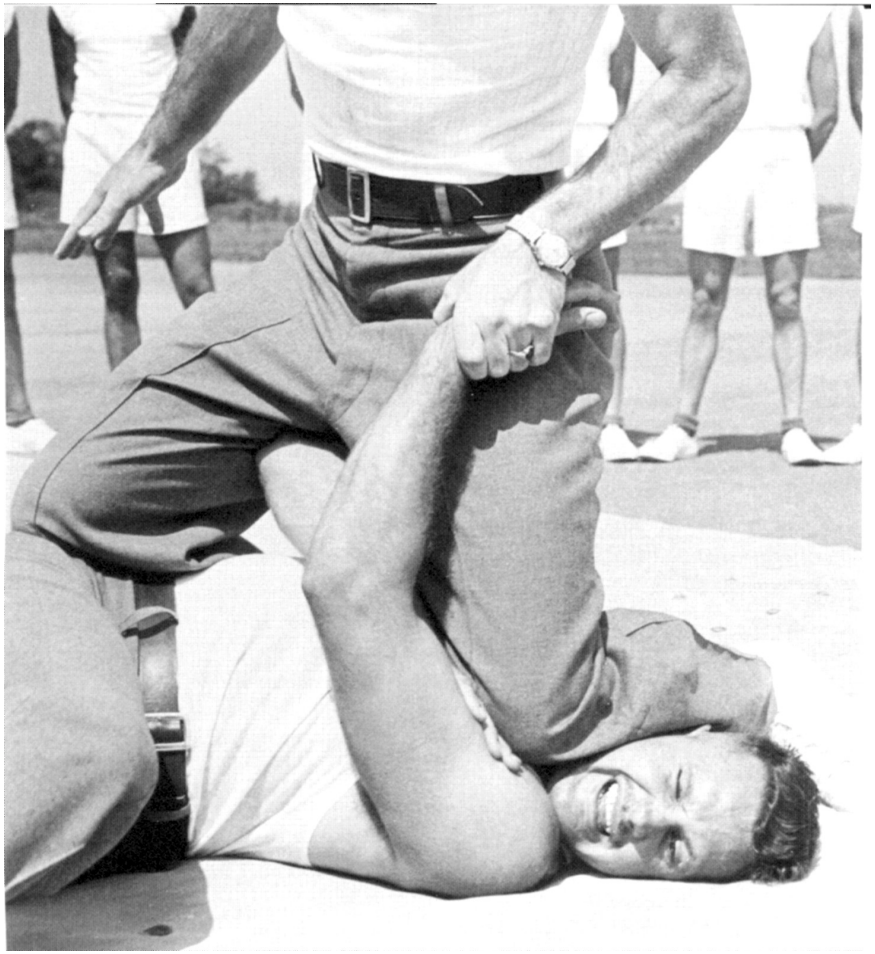
1.2 MW Combustion Turbine
-Dual fuel capability
-Base load design

1.8 MW Standby Generator
-Full interrupt capacity
-Flexibility for utility power


North Electric Feed
Electric Loads
Steam Loads
Boiler/Chiller Plant
T
T
M
Electric Bus
4,160V Electric
New CT Gen Unit (Dual Fuel)
Backup Boilers (Dual Fuel)
Gen 2
Gen 1
New Standby Diesel Generator
Utility-Owned Generators & Fuel Oil Tank (for Power Pool)
Fuel Oil
Fuel Oil
NADC Fuel Oil Tank
M
Interruptible Natural Gas
Existing Fuel Oil UST
Electric Substation Enclosure
South Electric Feed
CO-GEN Arrangement

Key Learnings:

- It is critical to include stakeholders in the process -- they need to have some commitment to the project
- It is critical to communicate well to all stakeholders
- An off-site tour of a successful installation of the new technology to be installed was critical to getting buy-in from our stakeholders
- Communicate, Communicate, Communicate



Key Takeaways:

- The Project needs a Champion – someone who can remain engaged with the project from conception to commissioning.
- The success of the project was dependent on the process
- The success of the project was dependent on the partners
- Finding Win-Win Relationships was critical